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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,194	09/29/2000	Gary D. Zimmerman	10001701-1	1444

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EXAMINER
PHAM, THIERRY L

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/675,194	ZIMMERMAN, GARY D.
	Examiner	Art Unit
	Thierry L. Pham	2624

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _20 December 2005_.

2a)☒ This action is **FINAL.**　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _9-14 and 31-37_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _9-14 and 31-37_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

• This action is responsive to the following communication: Response to Restriction/Election filed on 12/20/05.

• Claims 9-14 & 31-37 are pending; claims 24-29 have been withdrawn.

Election/Restrictions

Applicant's election with traverse of invention I in the reply filed on 12/20/05 is acknowledged. The traversal is on the ground(s) that the sub-combination does not have utility in itself or in other relations apart from the combination. This is not found persuasive because inventions I and II are both distinct and require different field of search and consideration, for example, invention I (claims 9-14, 31-37) is drawn to a cable having a printer controller, classified in class 385, subclass 1.15, and wherein invention II (claims 24-29) is drawn to a method for replacing defected cable with new compatible cable for a printing system, classified in class 439, subclass 1. In the instant case, invention I has other utilities such as connecting two host devices (i.e. host device can be printer, personal computer, and etc), and wherein invention II has other utilities such as replacing defected cable for different devices such as host pc, scanner, and etc. See MPEP § 806.05(d). The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The examiner is unable to locate any portion of the original filed disclosure that teaches limitations as

cited in claim 35 ("a first user interface signal for sending displayable data to the print engine; and a second user interface signal for receiving user input from the print engine").

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 30-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Terashima et al (US 6538762).

Regarding claim 30, Terashima discloses a cable (examiner interprets 13, 5, and 15 as a shown in fig. 2 as a single cable) comprising:

• a first connector (cable 13 for receiving data from host computer 11, fig. 2) having a print controller ready data interface for receiving print controller read data (PCRD);

• a second connector (cable 15 for sending processed data to printer 9, fig. 2) having a print engine ready data interface for providing print engine ready data (PERD); and

• a printer controller (printer controller 5, fig. 2) for receiving the print controller (printer controller 5 receives print data from host computer and formats to printer ready format, fig. 5, col. 4, lines 1-27) ready data based thereon for generating print engine ready data.

Regarding claim 31, Terashima further teaches the cable of claim 30 further comprising: a cable format conversion mechanism (parallel I/F 31 & 49, fig. 5) for converting signals in first format (parallel format, fig. 5) into corresponding signals in a second format (parallel format, fig. 5).

Regarding claim 32, Terashima further teaches a multiple target device support mechanism for supporting at least two different types (laser and ink-jet printers 9, fig. 2, col. 2, lines 12-23 and col. 12, lines 10-15) of target devices.

Regarding claim 33, Terashima further teaches the cable of claim 32 wherein the multiple target device support mechanism further comprises:

a laser interface (interface with laser printer, col. 12, lines 10-15) for providing an interface to laser printer;

non-impact printer interface (interface with ink-jet printer, col. 12, lines 10-15) for providing an interface to non-impact ink printers; and

a common formatting circuit coupled to the laser printer interface and the non-impact printer interface (interface with both ink-jet and laser, col. 12, lines 10-15) for providing functions to the laser printer interface and the non-impact printer interface.

Regarding claim 34, Terashima further teaches the cable of claim 30 wherein the print engine ready data interface includes:

a first signal (interface 49, fig. 5) for sending commands from the printer controller to the print engine;

a second signal (interface 49, fig. 5) for receiving status from the print engine in response to commands sent by the printer controller; and a third signal (interface 49, fig. 5) for transferring data from the printer controller to the print engine (parallel interface 49 is a bi-directional communication interface, therefore, it inherently includes sending and receiving signals from printer).

Regarding claim 35, Terashima further teaches a first user interface signal for sending displayable data (sending via parallel interface 49, fig. 5) to the print engine; and a second user interface signal for receiving (receiving via parallel interface 49, fig. 5) user input from the print engine.

Regarding claim 36, Terashima further teaches the cable of claim 30 wherein the printer controller ready data interface includes one of an industry standard computer port interface, a parallel port interface (parallel port interface as shown in fig. 5), a serial port interface, IEEE 1284 parallel port interface, a USB serial port interface, and an Ethernet interface.

Regarding claim 37, Terashima further teaches the cable of claim 30 wherein the print engine ready data interface includes one of an industry standard computer port interface, a parallel port interface (parallel port interface as shown in fig. 5), a serial port interface, IEEE 1284 parallel port interface, a USB serial port interface, and an Ethernet interface.

Claims 30-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin (US 6753903).

Regarding claim 30, Lin discloses a cable (examiner interprets 5, 1, and 4 as a shown in fig. 1 as a single cable) comprising:

● a first connector (interface 4 for receiving data from USB-DSC camera 2, fig. 1) having a print controller ready data interface for receiving print controller read data (PCRD);

● a second connector (interface 5 for sending processed data to printer 3, fig. 1) having a print engine ready data interface for providing print engine ready data (PERD); and

● a printer controller (printer controller 1, fig. 1) for receiving the print controller (printer controller 1 receives print data from digital camera 2 and formats to printer ready format, fig. 1, 1, lines 45-67) ready data based thereon for generating print engine ready data.

Regarding claim 31, Lin further teaches the cable of claim 30 further comprising:
a cable format conversion mechanism (USB interface engine 20, col. 3, lines 55-60) for converting signals in first format (serial mode, col. 3, lines 58-60) into corresponding signals in a second format (parallel mode, col. 3, lines 58-60).

Regarding claim 32, Lin further teaches a multiple target device support mechanism for supporting at least two different types (col. 3, lines 15-67) of target devices.

Regarding claim 33, Lin further teaches the cable of claim 32 wherein the multiple target device support mechanism further comprises:

a laser interface (USB interface 18, fig. 2) for providing an interface to laser printer;

non-impact printer interface (col. 3, lines 15-67) for providing an interface to non-impact ink printers; and

a common formatting circuit coupled to the laser printer interface and the non-impact printer interface (col. 3, lines 15-67) for providing functions to the laser printer interface and the non-impact printer interface.

Regarding claim 34, Lin further teaches the cable of claim 30 wherein the print engine ready data interface includes:

a first signal (USB transceiver, fig. 2) for sending commands from the printer controller to the print engine;

a second signal (USB transceiver, fig. 2) for receiving status from the print engine in response to commands sent by the printer controller; and a third signal (USB transceiver, fig. 2) for transferring data from the printer controller to the print engine.

Regarding claim 35, Lin further teaches a first user interface signal for sending displayable data (sending via USB interface, figs. 1-2) to the print engine; and a second user interface signal for receiving (receiving via USB interface, figs. 1-2) user input from the print engine.

Regarding claim 36, Lin further teaches the cable of claim 30 wherein the printer controller ready data interface includes one of an industry standard computer port interface, a parallel port interface, a serial port interface, IEEE 1284 parallel port interface, a USB serial port (USB interface, figs. 1-2) interface, and an Ethernet interface.

Regarding claim 37, Terashima further teaches the cable of claim 30 wherein the print engine ready data interface includes one of an industry standard computer port interface, a

parallel port interface, a serial port interface, IEEE 1284 parallel port interface, a USB serial port interface (USB interface, figs. 1-2), and an Ethernet interface.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashima as described in claim 30 above, and in view of Hirst et al (US 5930553).

Regarding claim 9, Terashima discloses a printer controller (printer circuit 5, fig. 2) comprises: a random access memory (memory 41, fig. 5) for storing non-resident printer controller program; a processor for executing computer programs coupled to the random access memory; a printer controller ready data interface for receiving print controller ready data from the source; and a print engine ready data interface for providing print engine ready data to the printer, wherein the printer controller receives the print controller ready data and based thereon generates print engine ready data, but fails to teach and/or suggest a dynamic loading program for automatically managing the download of the non-resident printer controller program to the random access memory and for automatically determining whether the printer controller program is compatible with the print engine and the printer controller.

Hirst, in the same field of endeavor for printing, teaches a dynamic loading program (printer controller 13 includes program for automatically detecting new/updated version of printer controller software, col. 4, lines 45-67) for automatically managing the download of the non-resident printer controller program to the random access memory (performs automatically without human intervention, col. 2, lines 40-50) and for automatically determining whether the printer controller program (automatically downloading and determining the compatibility

without human intervention, col. 2, lines 32-54 and col. 3, lines 34-56, and col. 4, lines 52-62 and col. 6, lines 12-15) is compatible with the print engine and the printer controller.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify printer controller of Terashima to include a program that is automatically downloading and managing the downloaded program as taught by Hirst because of a following reason: (●) ensuring the most updated/upgraded new printer controller program enhances the printer's operating efficiency and to improve output quality performance, and in addition, performs downloading and managing automatically without human intervention help reduces personnel costs.

Therefore, it would have been obvious to combine Terashima with Hirst to obtain the invention as specified in claim 9.

Regarding claim 10, Hirst further discloses the printer controller of claim 9, wherein the dynamic loading program, when executing on the processor, selectively downloads (download new/updated version of printer controller program, fig. 5) from the source the non-resident printer controller program to the printer controller when it is determined that the current version of the printer controller resident in the random access memory is not valid (prior to download the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid, fig. 5, col. 2, lines 32-55). Please note: this dynamic as taught by Hirst can be installed any computer readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 41 as taught by Terashima).

Regarding claim 11, Hirst further discloses the printer controller of claim 9, wherein the dynamic loading program, when executing on the processor, selectively downloads (download new/updated version of printer controller program, fig. 5) from the source the non-resident printer controller program to the printer controller when it is determined that the current version of the printer controller program resident in the random access memory is one of the non-existent and corrupt (prior to download the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent, fig. 5, col. 2, lines 32-55). Please note: this dynamic as taught by Hirst can be installed any computer

readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 41 as taught by Terashima).

Regarding claim 12, Hirst further discloses the printer controller of claim 10, wherein the printer controller program, when executing on the processor, receives print controller ready data and based thereon generates print engine ready data for controlling a print engine (printer controller 13 provides print engine ready data and transmits provided data to print engine, fig. 1, col. 4, lines 30-35). Please note: this dynamic as taught by Hirst can be installed any computer readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 41 as taught by Terashima).

Regarding claim 13, Hirst further discloses the printer controller of claim 9 further comprising: an integrity check module (printer controller including a micro-controller 30, fig. 1), when executing on the processor, for performing an integrity check on the printer controller program to determine whether the printer controller program is valid, re-installing the printer controller program from the source when the printer controller program is not valid (installing a new/updated version of printer controller program if the old printer controller program is incompatible and/or valid, fig. 5), performing compatibility tests to determine whether the printer controller program is compatible with the printer controller and a printing software, re-installing the printer controller program from the source when the printer controller program not compatible (prior to download and install the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent/compatible, fig. 5, col. 2, lines 32-55) with the printer controller and the printing software. Please note: this dynamic as taught by Hirst can be installed any computer readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 41 as taught by Terashima).

Regarding claim 14, Terashima further teaches the cable of claim 9 wherein the printer controller (controller 5, fig. 2) is embodied in one of a single integrated circuit (ASIC integrated circuit, col. 3, lines 63-65) and an application specific integrated circuit (ASIC).

Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin as described in claim 30 above, and in view of Hirst et al (US 5930553).

Regarding claim 9, Lin discloses a printer controller (printer circuit 5, fig. 2) comprises: a random access memory (memory 12, fig. 1) for storing non-resident printer controller program; a processor for executing computer programs coupled to the random access memory; a printer controller ready data interface for receiving print controller ready data from the source; and a print engine ready data interface for providing print engine ready data to the printer, wherein the printer controller receives the print controller ready data and based thereon generates print engine ready data, but fails to teach and/or suggest a dynamic loading program for automatically managing the download of the non-resident printer controller program to the random access memory and for automatically determining whether the printer controller program is compatible with the print engine and the printer controller.

Hirst, in the same field of endeavor for printing, teaches a dynamic loading program (printer controller 13 includes program for automatically detecting new/updated version of printer controller software, col. 4, lines 45-67) for automatically managing the download of the non-resident printer controller program to the random access memory (performs automatically without human intervention, col. 2, lines 40-50) and for automatically determining whether the printer controller program (automatically downloading and determining the compatibility without human intervention, col. 2, lines 32-54 and col. 3, lines 34-56, and col. 4, lines 52-62 and col. 6, lines 12-15) is compatible with the print engine and the printer controller.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify printer controller of Lin to include a program that is automatically downloading and managing the downloaded program as taught by Hirst because of a following reason: (●) ensuring the most updated/upgraded new printer controller program enhances the printer's operating efficiency and to improve output quality performance, and in addition, performs downloading and managing automatically without human intervention help reduces personnel costs.

Therefore, it would have been obvious to combine Lin with Hirst to obtain the invention as specified in claim 9.

Regarding claim 10, Hirst further discloses the printer controller of claim 9, wherein the dynamic loading program, when executing on the processor, selectively downloads (download new/updated version of printer controller program, fig. 5) from the source the non-resident printer controller program to the printer controller when it is determined that the current version of the printer controller resident in the random access memory is not valid (prior to download the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid, fig. 5, col. 2, lines 32-55). Please note: this dynamic as taught by Hirst can be installed any computer readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 12 as taught by Lin).

Regarding claim 11, Hirst further discloses the printer controller of claim 9, wherein the dynamic loading program, when executing on the processor, selectively downloads (download new/updated version of printer controller program, fig. 5) from the source the non-resident printer controller program to the printer controller when it is determined that the current version of the printer controller program resident in the random access memory is one of the non-existent and corrupt (prior to download the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent, fig. 5, col. 2, lines 32-55). Please note: this dynamic as taught by Hirst can be installed any computer readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 12 as taught by Lin).

Regarding claim 12, Hirst further discloses the printer controller of claim 10, wherein the printer controller program, when executing on the processor, receives print controller ready data and based thereon generates print engine ready data for controlling a print engine (printer controller 13 provides print engine ready data and transmits provided data to print engine, fig. 1, col. 4, lines 30-35). Please note: this dynamic as taught by Hirst can be installed any computer readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 12 as taught by Lin).

Regarding claim 13, Hirst further discloses the printer controller of claim 9 further comprising: an integrity check module (printer controller including a micro-controller 30, fig. 1), when executing on the processor, for performing an integrity check on the printer controller

program to determine whether the printer controller program is valid, re-installing the printer controller program from the source when the printer controller program is not valid (installing a new/updated version of printer controller program if the old printer controller program is incompatible and/or valid, fig. 5), performing compatibility tests to determine whether the printer controller program is compatible with the printer controller and a printing software, re-installing the printer controller program from the source when the printer controller program not compatible (prior to download and install the new/updated version of printer controller program, the printer controller 13 must determine and test whether the stored programs are valid/existent/compatible, fig. 5, col. 2, lines 32-55) with the printer controller and the printing software. Please note: this dynamic as taught by Hirst can be installed any computer readable medium (i.e. RAM, Flash memory, ROM, and etc, or memory 12 as taught by Lin).

Regarding claim 14, Lin further teaches the cable of claim 9 wherein the printer controller (controller 1, fig. 1) is embodied in one of a single integrated circuit (col. 2, lines 38-67) and an application specific integrated circuit (ASIC).

Response to Arguments

Applicant's arguments with respect to claims 30-37 have been considered but are moot in view of the new ground(s) of rejection. Claims 30-37 are newly added and include features that were not previously cited, and in response, the examiner herein introduces a new ground of rejections in view of newly found prior art references. Please note: two separate prior art rejections are herein incorporated with this office action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO
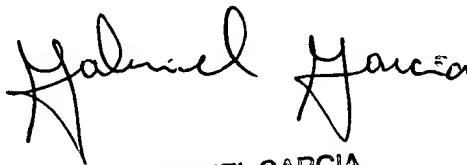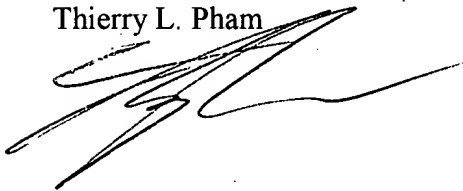
MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L. Pham whose telephone number is (571) 272-7439. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571)272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham

GABRIEL GARCIA
PRIMARY EXAMINER